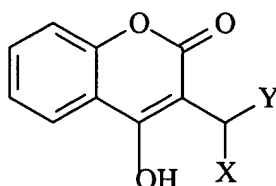


# Claims

We claim:

1. An anticoagulant compound having the following formula:

Formula I

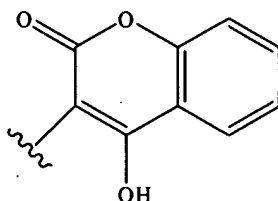


wherein:

X is hydrogen, alkyl, cycloalkyl, halogen, heterocyclyl, hydroxy, alkoxy,  $R_2$ , heteroaryl or aryl optionally substituted with halogen or  $\text{COOR}_1$ ;

$R_1$  is independently in each occurrence hydrogen, alkyl or alkylaryl, all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_2$  is



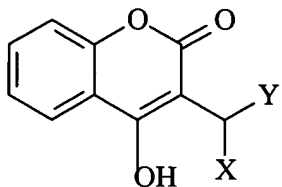
Y is  $(\text{CHR}_3)_n\text{COOR}_4$  or aryl optionally substituted with  $\text{COOR}_5$  wherein  $n = 1 - 3$ ;

$R_3$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_4$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy; and

$R_5$  is independently in each occurrence hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy.

2. A pharmaceutical composition comprising an anticoagulant compound having the following formula:

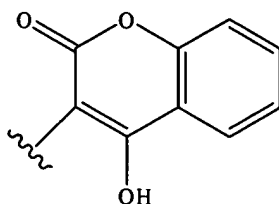


wherein:

X is hydrogen, alkyl, cycloalkyl, halogen, heterocyclyl, hydroxy, alkoxy,  $R_2$ , heteroaryl or aryl optionally substituted with halogen or  $\text{COOR}_1$ ;

$R_1$  is independently in each occurrence hydrogen, alkyl or alkylaryl, all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_2$  is



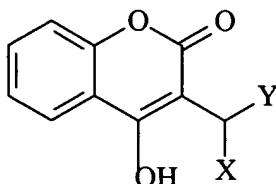
Y is  $(\text{CHR}_3)_n\text{COOR}_4$  or aryl optionally substituted with  $\text{COOR}_5$  wherein  $n = 1 - 3$ ;

$R_3$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_4$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy; and

$R_5$  is independently in each occurrence hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy.

3. A method for providing anticoagulant activity to a patient in need of such activity wherein said method comprises administering to said patient an anticoagulant compound having the following formula:

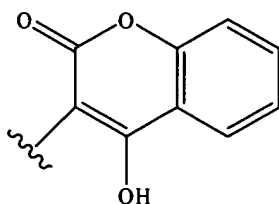


wherein:

X is hydrogen, alkyl, cycloalkyl, halogen, heterocyclyl, hydroxy, alkoxy,  $R_2$ , heteroaryl or aryl optionally substituted with halogen or  $\text{COOR}_1$ ;

$R_1$  is independently in each occurrence hydrogen, alkyl or alkylaryl, all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_2$  is



Y is  $(\text{CHR}_3)_n\text{COOR}_4$  or aryl optionally substituted with  $\text{COOR}_5$  wherein  $n = 1 - 3$ ;

$R_3$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy;

$R_4$  is hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy; and

$R_5$  is independently in each occurrence hydrogen, alkyl or alkylaryl, aryl all optionally substituted with lower alkyl, hydroxy, halogen, or alkoxy.